



1/18

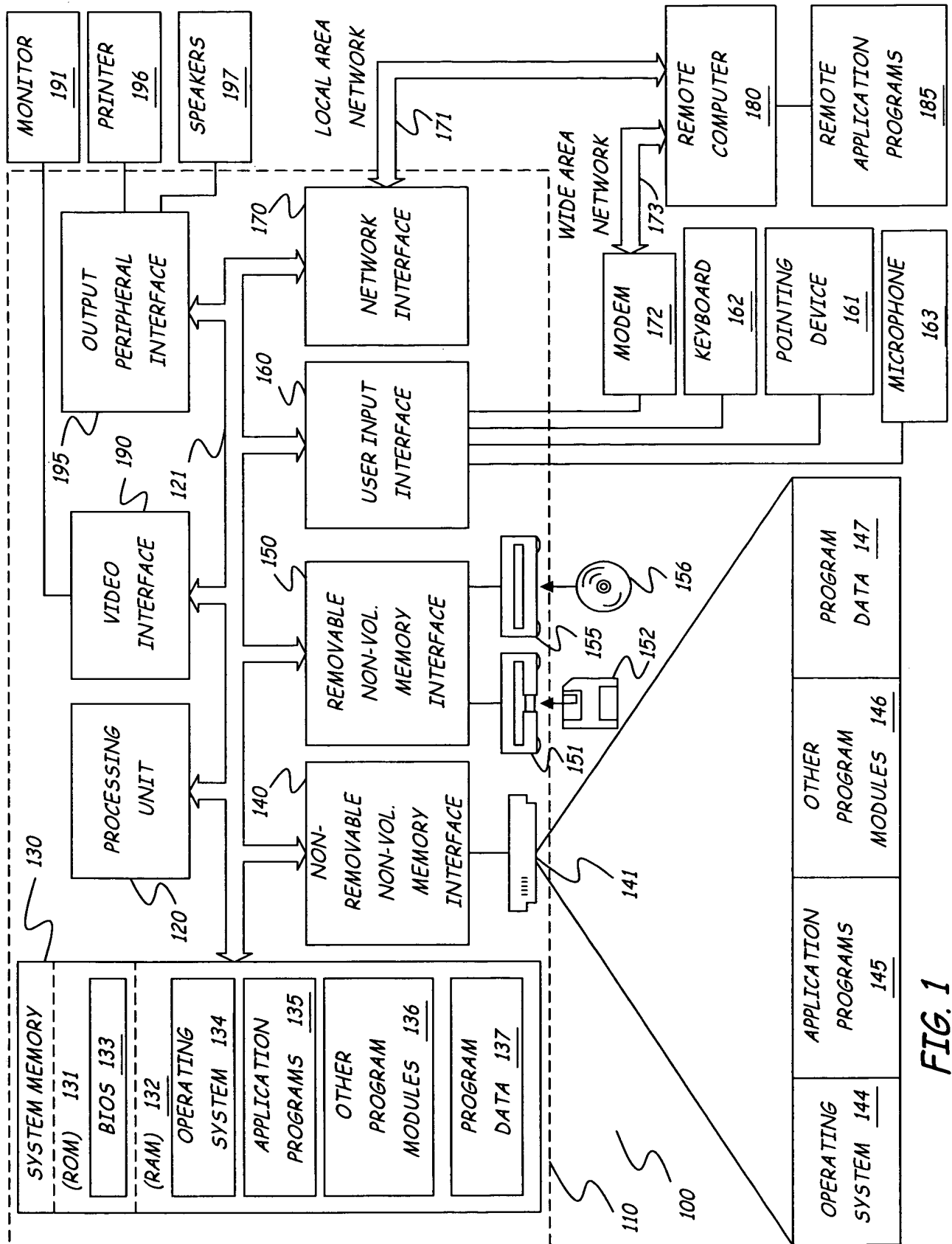


FIG. 1

2/18

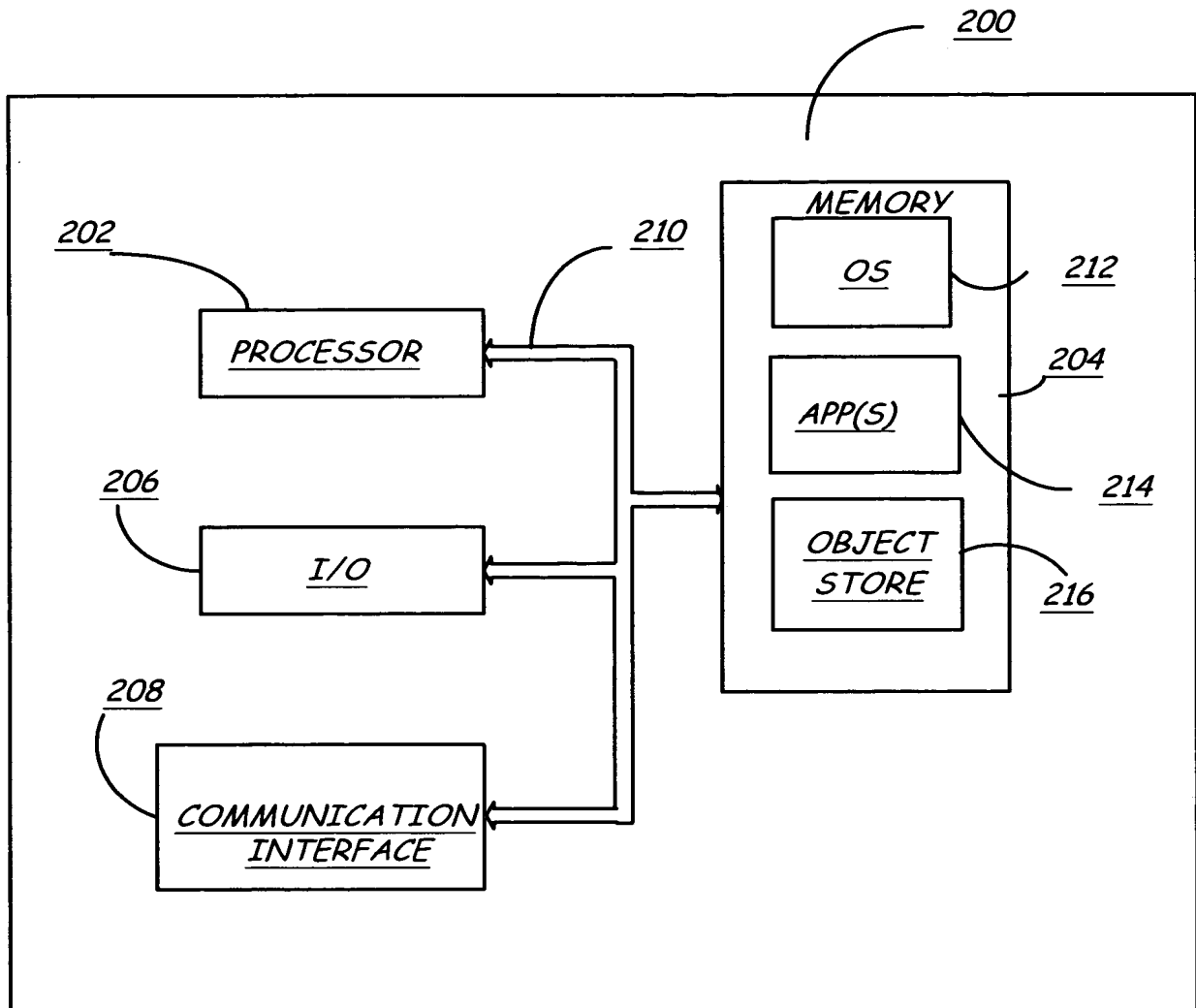


FIG. 2

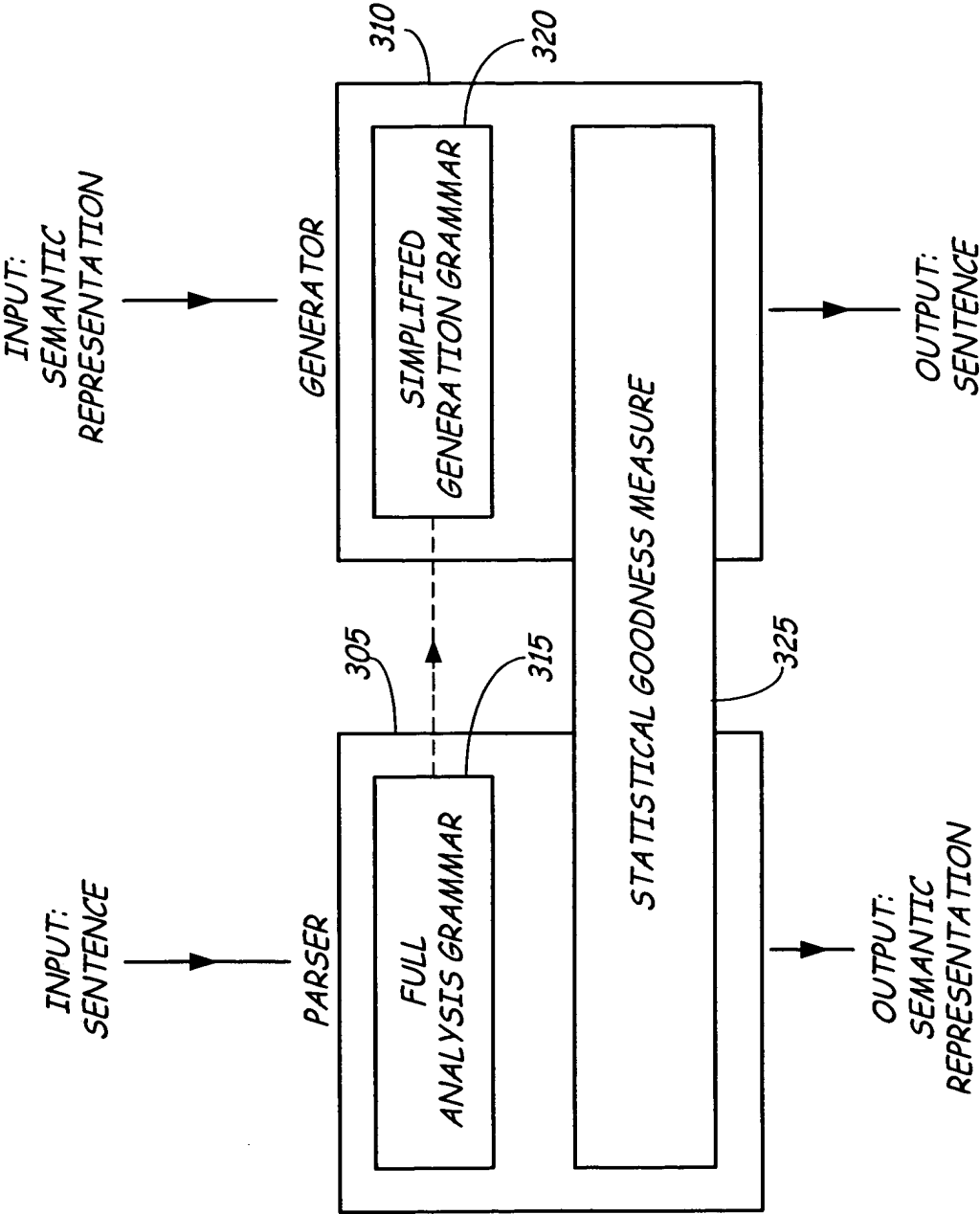


FIG. 3

4/18

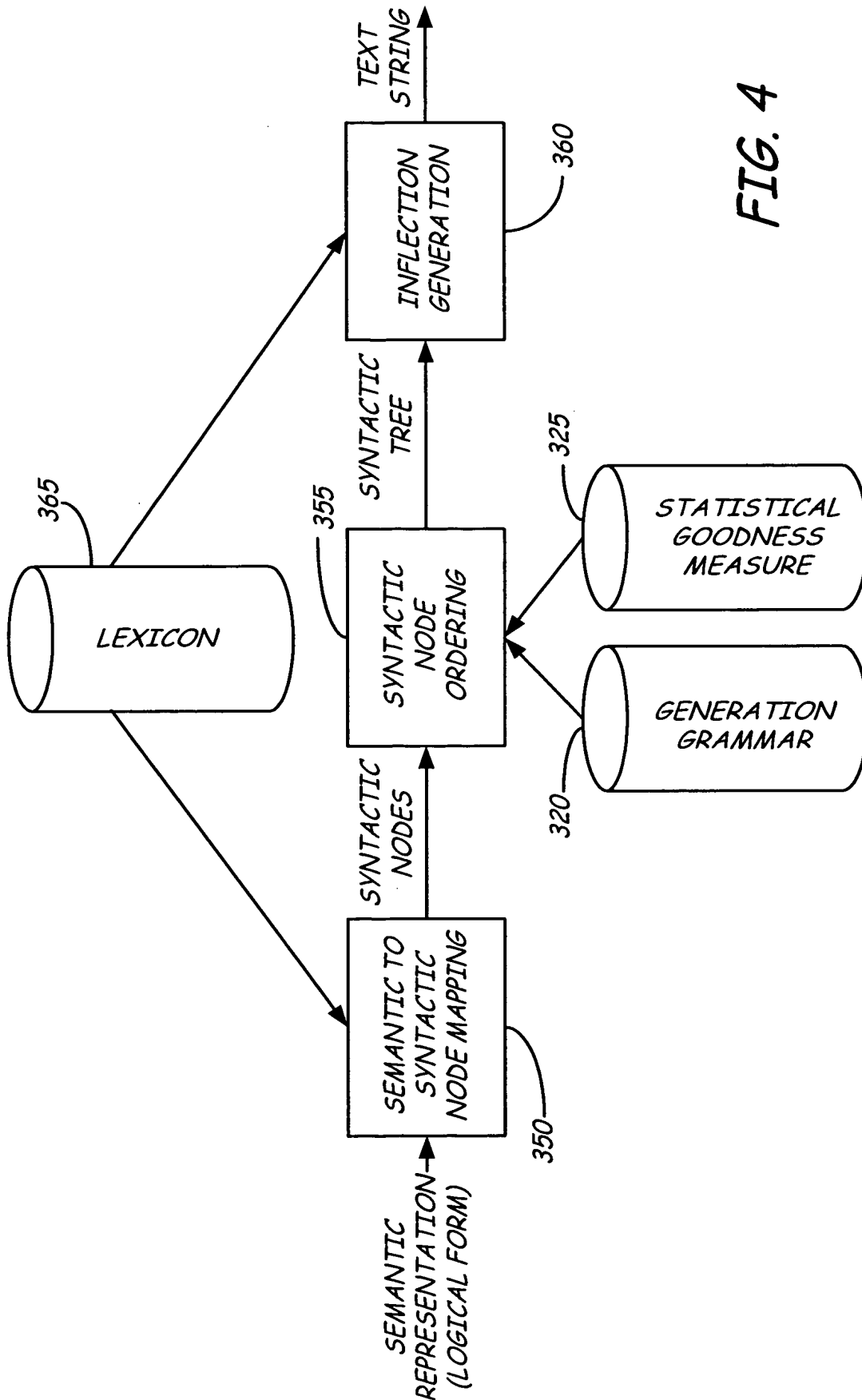


FIG. 4

5/18

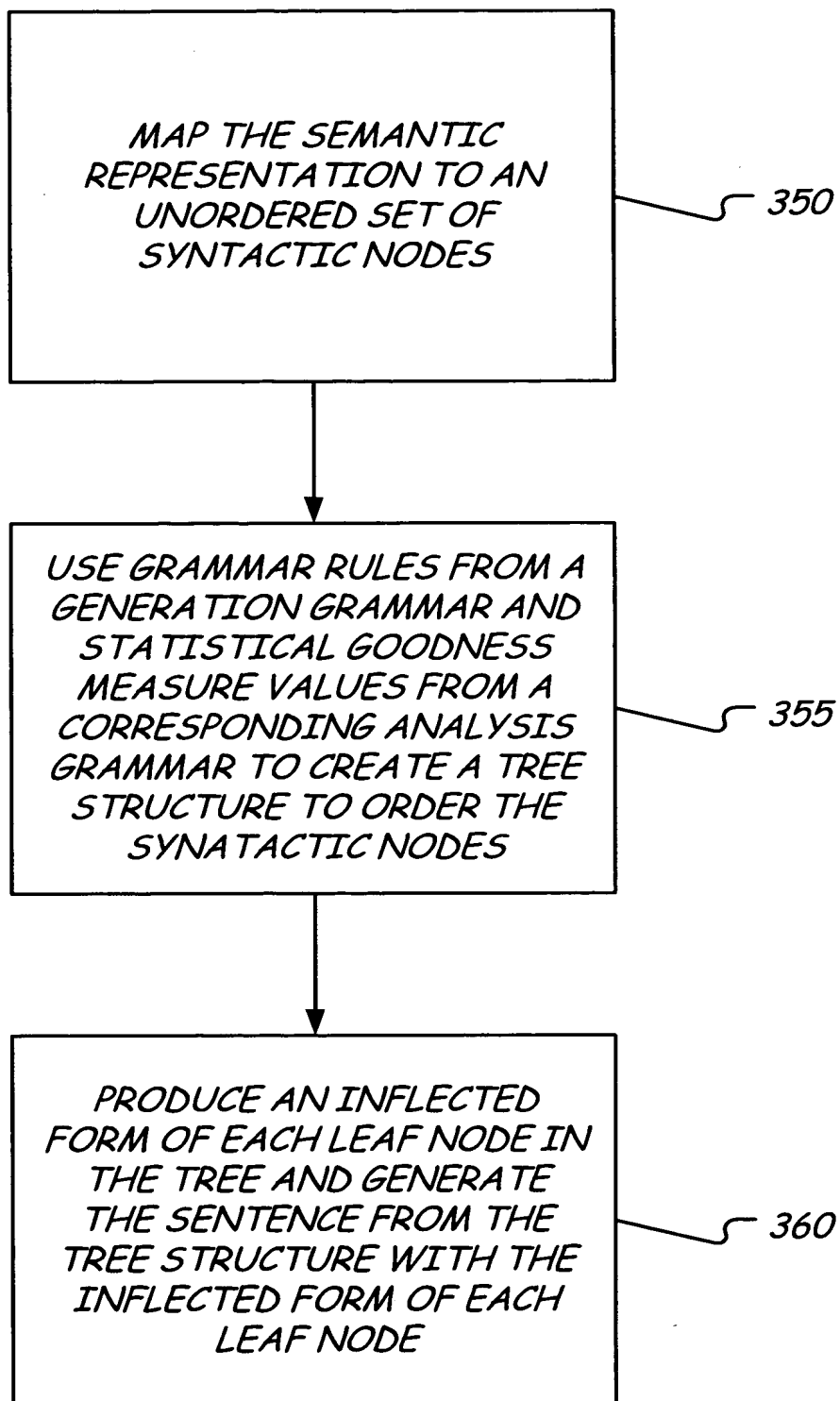


FIG. 5

6/18

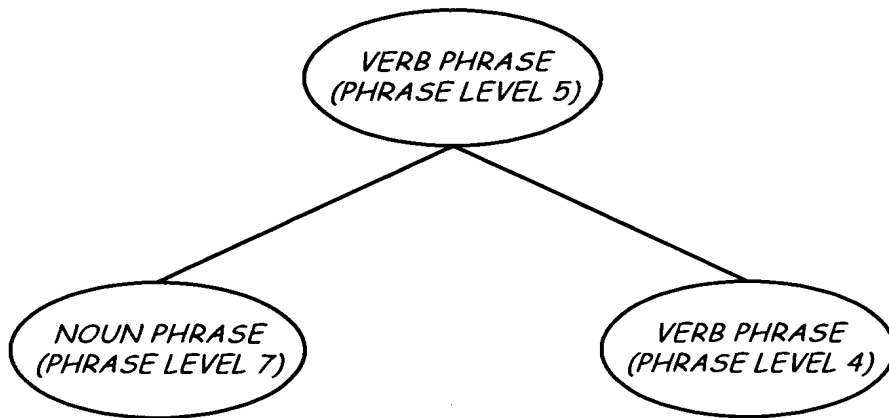


FIG. 6

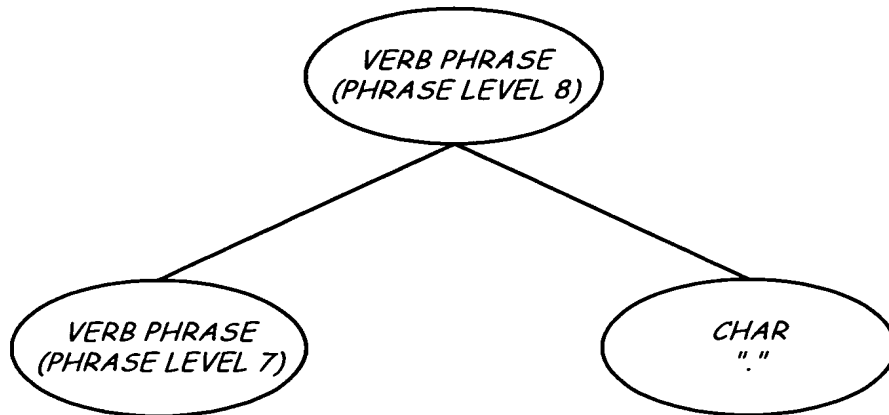


FIG. 8

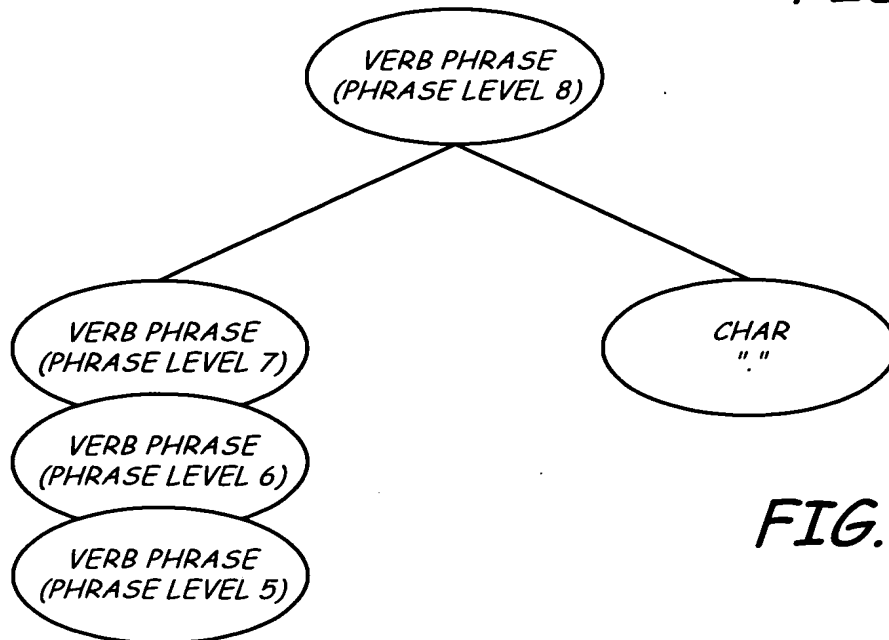


FIG. 9

7/18

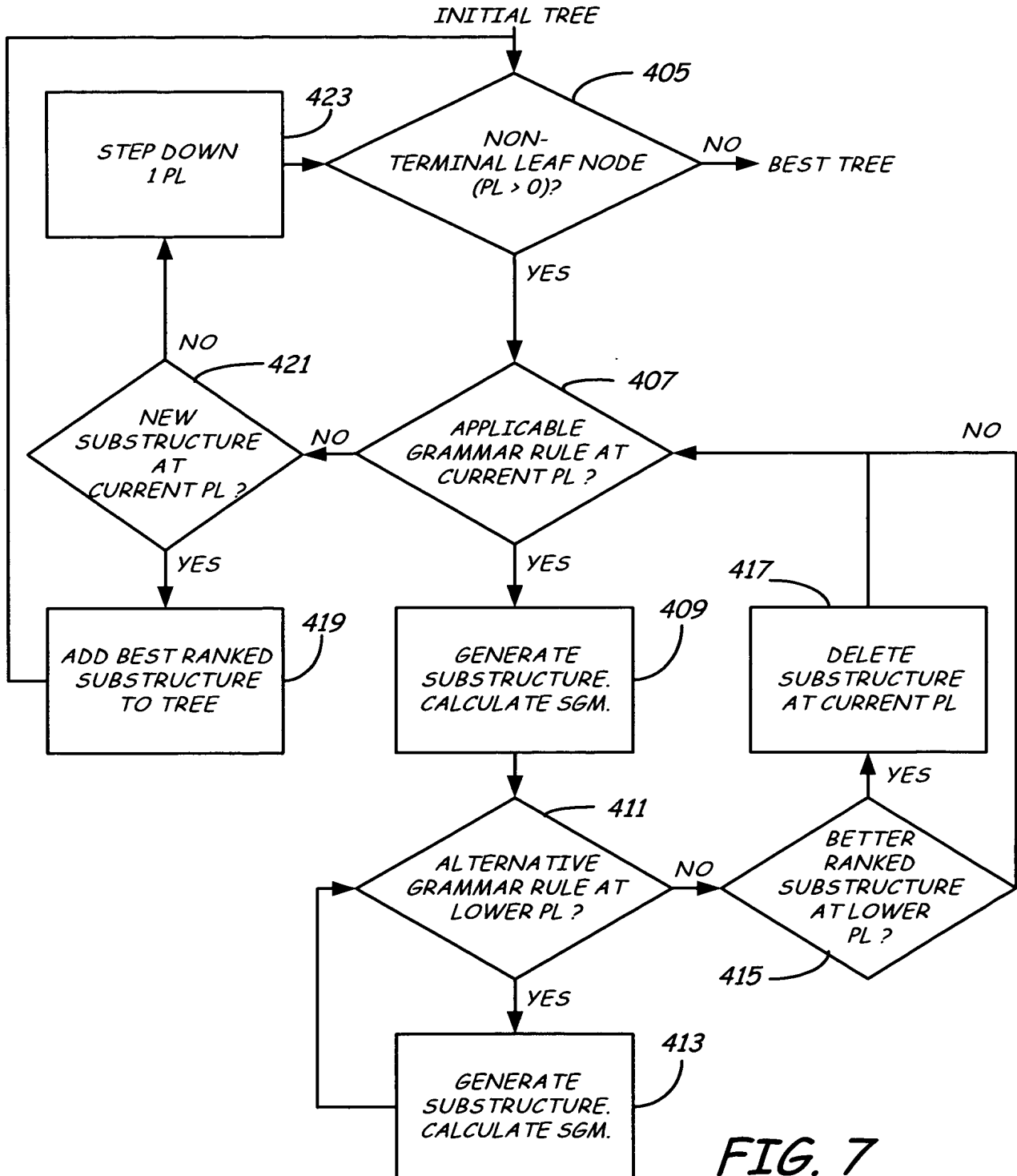


FIG. 7

8/18

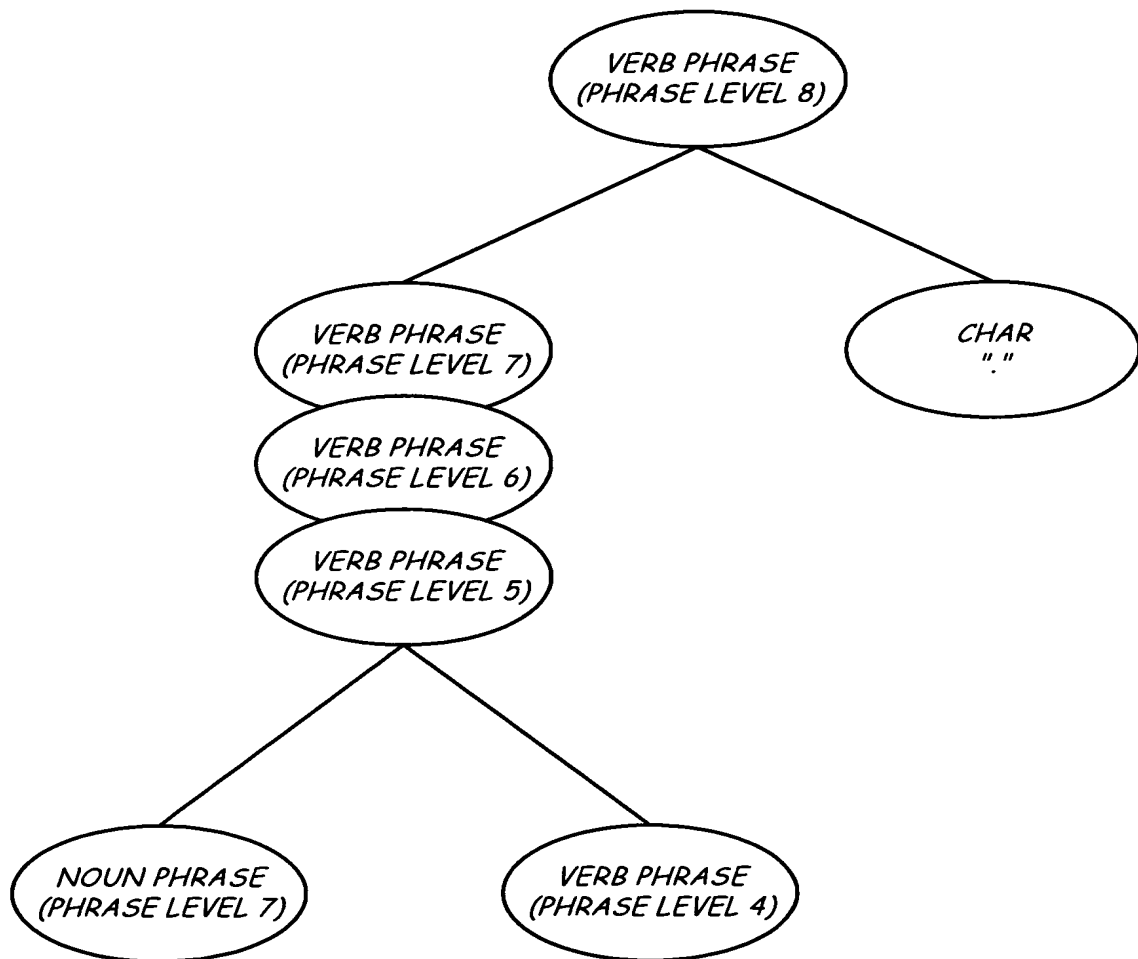


FIG. 10

9/18

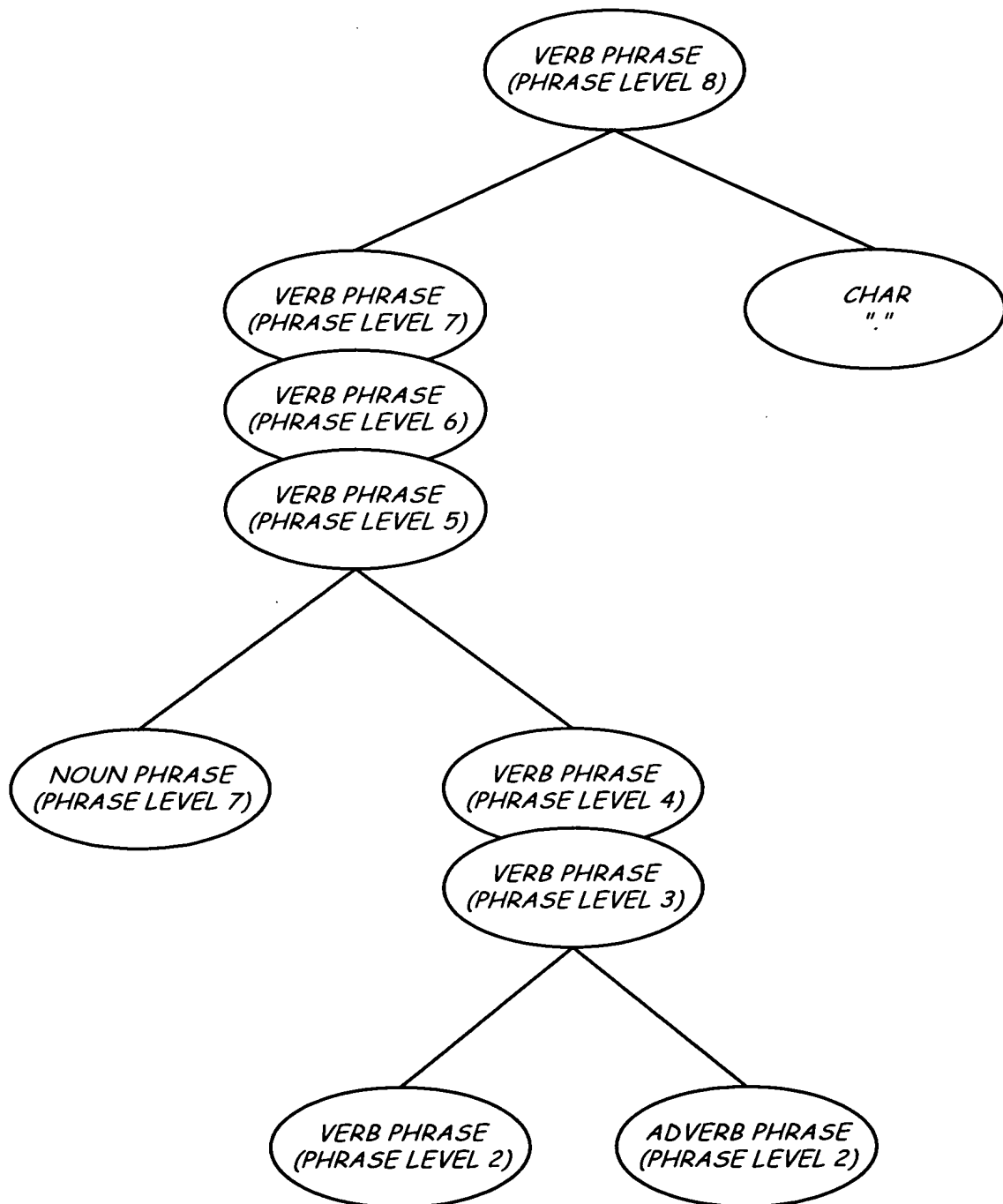


FIG. 11

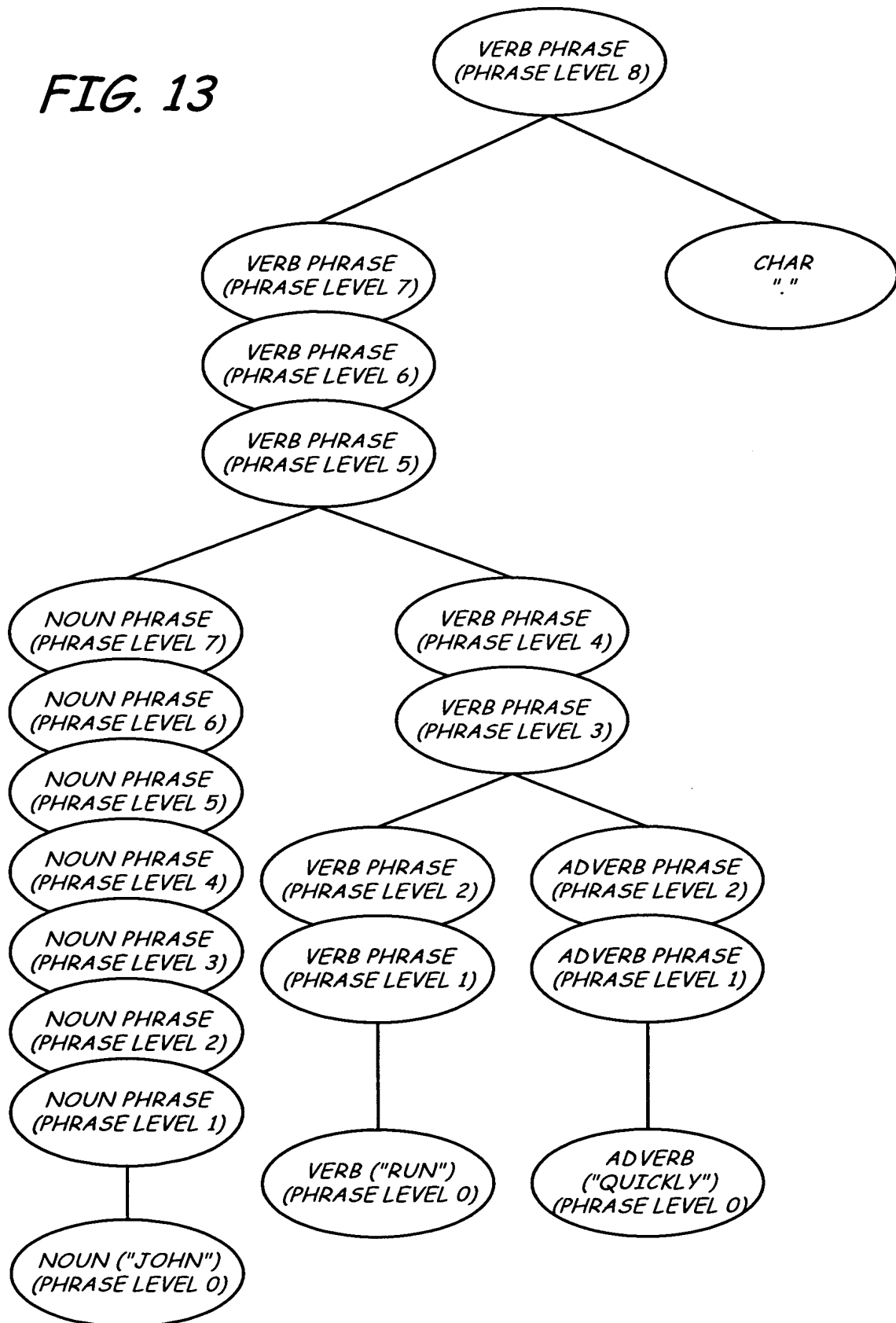
10/18



FIG. 12

11/18

FIG. 13



12/18

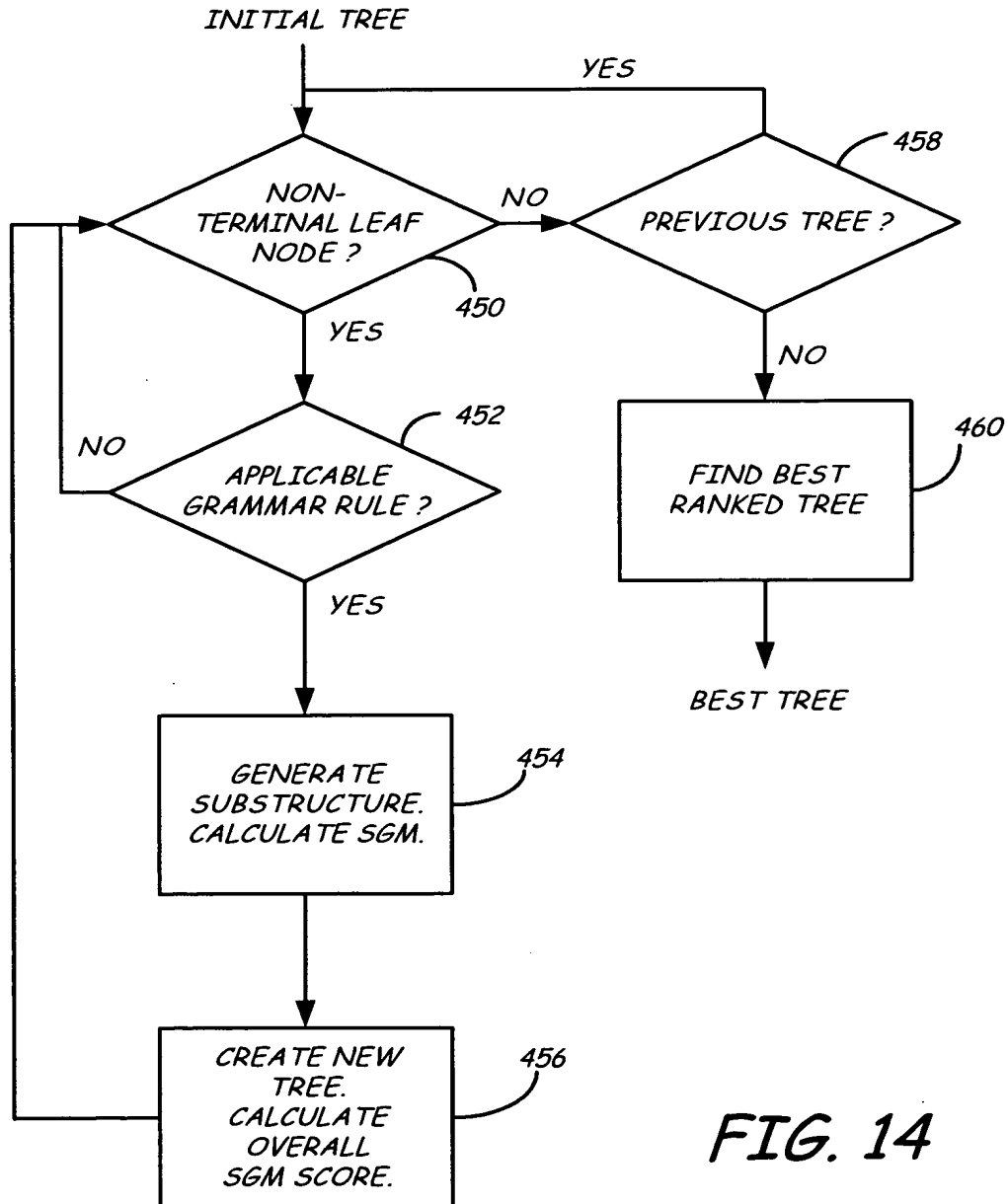


FIG. 14

13/18

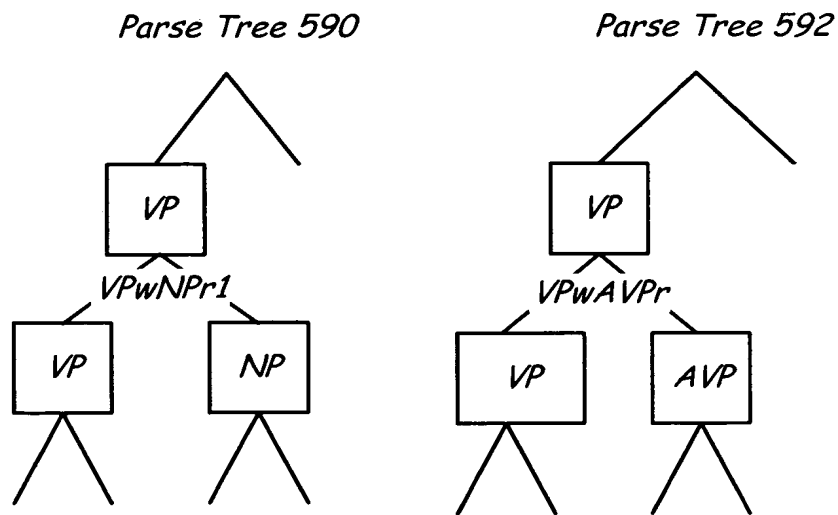


FIG. 15A

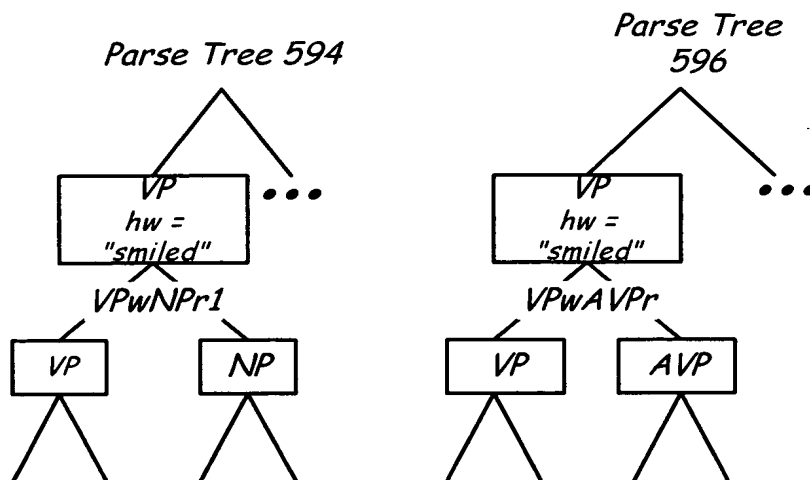


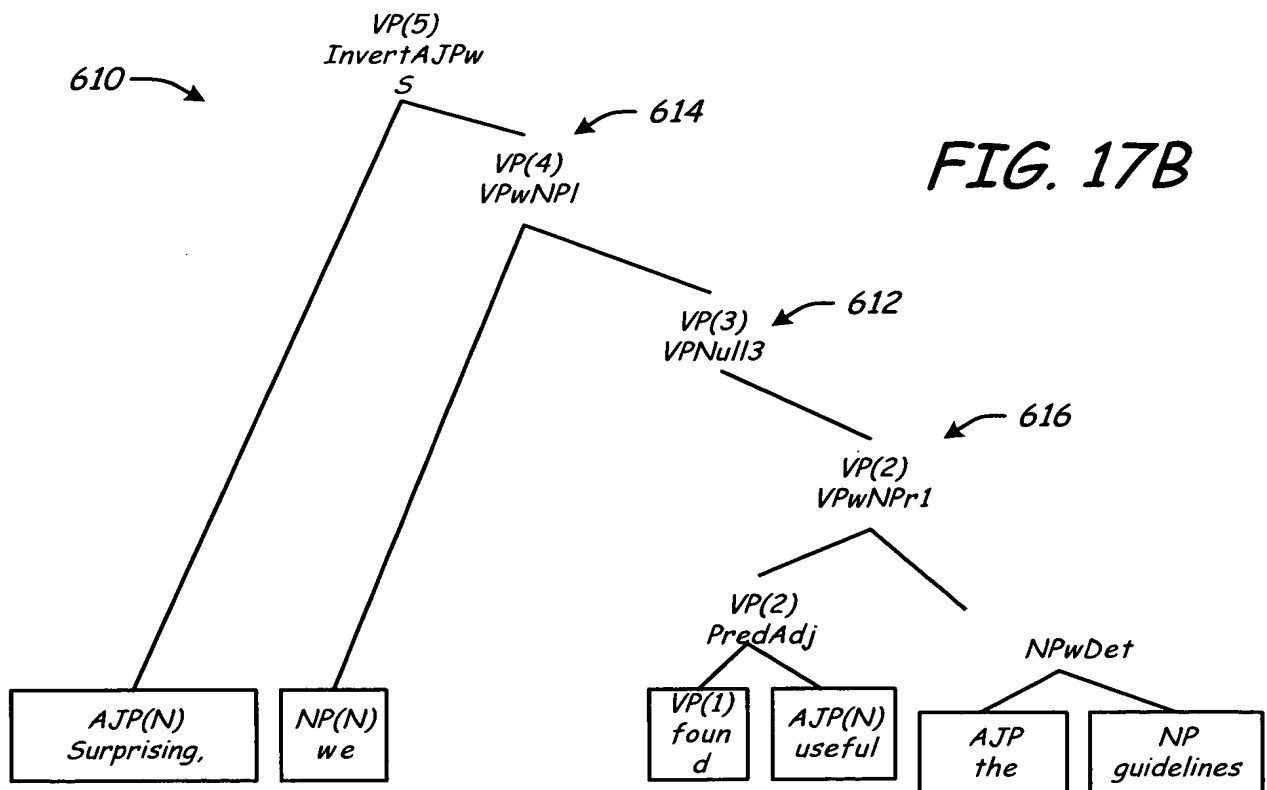
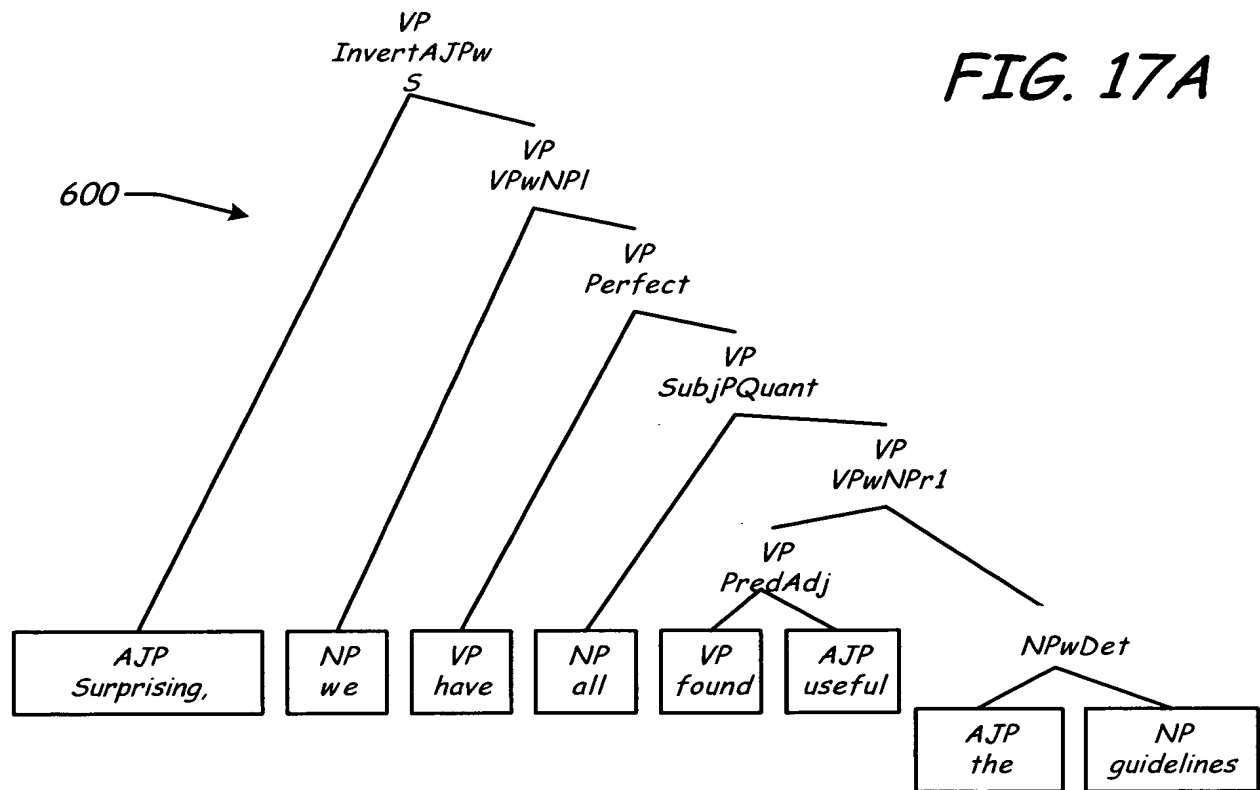
FIG. 15B

14/18

Rule Name	Rule	Description (and an example)
VERBtoVP	VP → VERB	Promote a verb into a verb phrase
PredAdj	VP → VP AJP	Add on an adjective. “ <u>It has been found effective</u> ”
VPwNPtI	VP → VP NP	Add direct object to a VP “ <u>I hit Bill</u> ”
Perfect	VP → VP VP	Adds the VP “have” to a VP “ <u>Joe had gone</u> ”
SubjPQuant	VP → NP VP	Add quantifiers to the VP like “all”, “both”, ... “ <u>The children have all gone</u> ”
VPwNPi	VP → NP VP	Add noun subject to a VP “ <u>John jumped.</u> ”
SubjectAJP	VP → AJP VP	Add AJP subject to a VP “ <u>More surprising is his attitude</u> ”
InvertAJPwS	VP → AJP VP	Add final modifier, AJP, to the left of a VP “ <u>More remarkable still, he went</u> ”
Topicalization	VP → NP VP	Add object of VP, NP, to the left of a VP “ <u>A better-looking man I have not seen</u> ”

FIG. 16

15/18



16/18

Phrase Level	Rule Name	Rule	Level Description
1	VERBtoVP	VP(1) → VERB(PL_Verb_Max)	Create a VP
2	PredAdj	VP(2) → VP(1)	Add post modifiers
	VPwNPt1	VP(2) → VP(1)	
	VPNull2	VP(2) → VP(1)	
3	Perfect	VP(3) → VP(1)	Add "have" and quantifiers
	SubjPQuant	VP(3) → NP(PL_NP_Max) VP(2,3)	
	VPNull3	VP(3) → VP(2)	
4	VPwNP1	VP(4) → NP(PL_NP_Max) VP(3)	Add subject
	SubjectAJP	VP(4) → AJP(PL_AJP_Max) VP(3)	
	VPNull4	VP(4) → VP(3)	
5	InvertAJPwS	VP(5) → AJP(PL_AJP_Max) VP(4)	Add modifiers to VPs that have a subject
	Topicalization	VP(5) → NP(PL_NP_Max) VP(4)	
	VPNull5	VP(5) → VP(4)	

FIG. 18

17/18

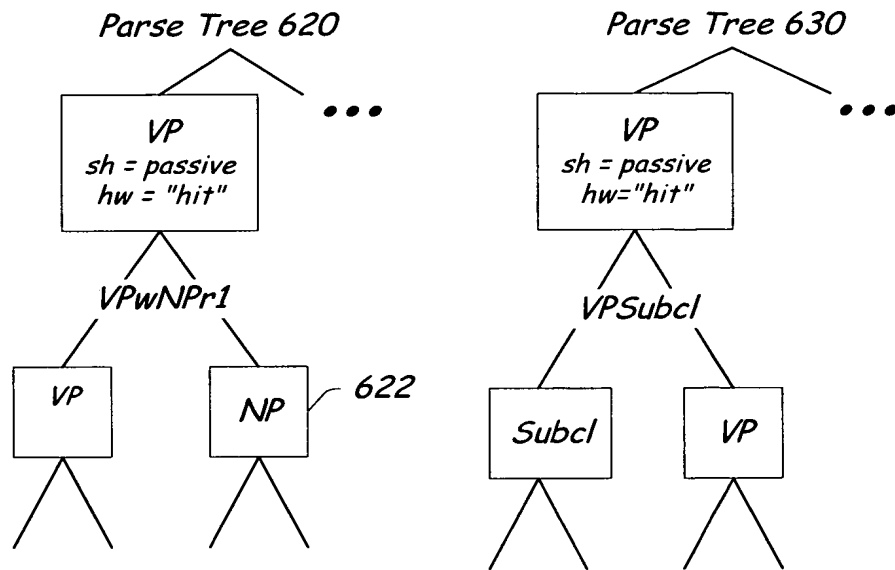


FIG. 19

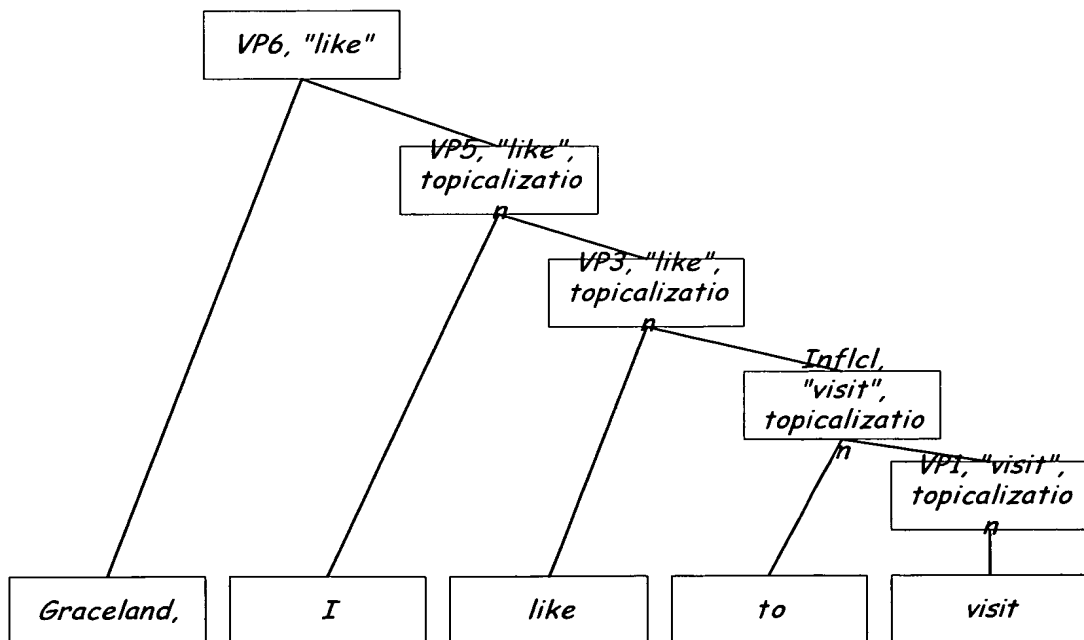


FIG. 20

18/18

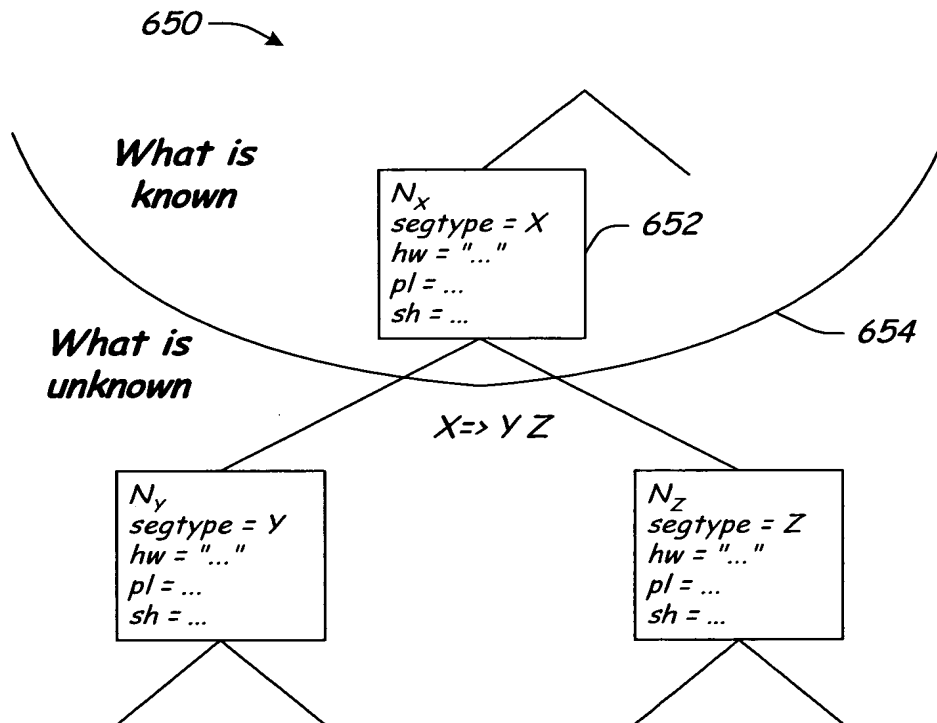


FIG. 21